



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200



D5359-041
Job Sheet 168473

Part No: D5359-041

Job Qty: 2 ea **(6)**

Part Name: Strut Assembly, LH/RH



Part Weight: 0 lbs

Status: Scheduled

Priority: High **(High)**

Job Created: 11/15/17

Job Tracking No:

Due Date: 11/20/17

Created By: Mario Poulin

Type: SOLD

Description:

Note: DWG REV B SHEETS 1,2,3 IPP Rev: A RQ 16.03.23 Verified by: DD IPP REV:B 17.01.20 AS PER REV.B DD VERF: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	2 Ea	11/17/17	11/17/17	0.00	0.00	Start Up Container		MLC
110	Small Fab	2 pcs	11/17/17	11/17/17	0.00	1.57	Small Fab		MLC
112	CNC Bend Skidtubes	2 pcs	11/17/17	11/17/17	0.59	1.92	CNC Bend Crosstube		
114	Small Fab	2 pcs	11/17/17	11/17/17	0.00	1.57	Small Fab		
120	QC	2 pcs	11/17/17	11/17/17	0.00	0.00	QC5		
130	Mill Conv	2 pcs	11/18/17	11/18/17	0.00	2.28	Mill Conv 1		
140	QC	2 pcs	11/18/17	11/18/17	0.00	0.00	QC2		
150	QC	2 pcs	11/18/17	11/18/17	0.00	0.00	QC8		
160	Powdercoat	2 pcs	11/18/17	11/18/17	0.00	0.37	Powdercoat2		
170	QC	2 pcs	11/18/17	11/18/17	0.00	0.00	QC3		
180	Small Fab	2 pcs	11/18/17	11/18/17	0.00	1.57	Small Fab		
190	Mill Conv	2 pcs	11/18/17	11/18/17	0.00	2.28	Mill Conv 1		
200	QC	2 pcs	11/18/17	11/18/17	0.00	0.00	QC5		
210	Small Fab	2 pcs	11/20/17	11/20/17	0.00	1.57	Small Fab		
220	QC	2 pcs	11/20/17	11/20/17	0.00	0.00	QC5		
230	Packaging	2 pcs	11/20/17	11/20/17	0.00	0.00	Packaging3		
240	QC21-SA	2 Ea	11/20/17	11/20/17	0.00	0.00	QC21		

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	M304TS0.750W.049	7 21	1,540	0	0
180-Small Fab	AN3CH11A	4	16	0	0
	AN3CH12A	4	20	0	0
	D5359-3	4	0	0	0
	MS21043-3	8	767	0	0
	NAS1149C0363R	20	170	0	0
210-Small Fab	D2690-6	4	16	0	0
	D5359-5	2	2	0	0
	D5359-7	2	5	0	0
	MS17984-C405	2	6	0	0
	MS17984-C608	2	0	0	0
	NAS509-6C	4	7	0	0

Part Specifications

www.dartaerospace.com

Mfg Date: 11/15/17
Job No: 168473

[illegible]

Specifications could not be found.

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

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Page 1

Item ID: D5359-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut Assembly, LH/RH
Start Date: 7/3/2017 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 7/3/2017 Req'd Qty: 1.00 *1* Customer:
Reference: SCHEDULED/C
Approvals: Process Plan:  Date: JUN 16 2017 Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D5359	B								

110 0.00
110
Small Fab Memo 1.13
Small Fab 1- CUT SQUARE TUBING AT 48.00"

REFERENCE ONLY

112 0.00
112
CNC Bend 1 Memo 0.02
CNC Delta 100 Bender 1- FORM TUBING AS PER DWG USING DT10300 USING CNC BENDER
100 AND FOLIO 32 BEND PROG D5359.

114 0.00
114
Small Fab Memo 0.02
Small Fab 1- TRIM OFF EXTRA MATERIAL USING DT10300
2- DEBURR

DAS
30
9-89

JUL 11 2017

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Item ID: D5359-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut Assembly, LH/RH
Start Date: 7/3/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/3/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference: SCHEDULED/C

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.01				1			DAS 38 9-89 JUL 13 2017
130 *130* Mill Conv Conventional Milling Machine	Memo 1- DRILL HOLES IN BOTH ENDS OF TUBE AS PER DWG 2- DEBURR	0.00 0.95				1	0		DAS 32 9-89 17-07-13
140 *140* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.02				1	0		DAS 32 9-89 17-07-13

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Item ID: D5359-041

Accept

N900040100

Setup

Start

NS1

Revision ID:

Stop

NS2

Item Name: Strut Assembly, LH/RH

Start Date: 7/3/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/3/2017 Req'd Qty: 1.00

1

Customer:

Reference: SCHEDULED/C

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC8- Inspect parts - second check

0.00

150

QC

Memo

0.02

Quality Control

DAS
14
9-88

17/07/14

160

White Gloss(Ref:4.3.5.2) per QSI005 4.3-Steel

0.00

160

Powdercoat

Memo

0.30

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

8:00 pm
400°F
8:30

170

QC3- Inspect Part Finish

0.00

170

QC

Memo

0.02

Quality Control

DAS
38
9-88

JUL 17 2017

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Item ID: D5359-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut Assembly, LH/RH
Start Date: 7/3/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/3/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference: SCHEDULED/C

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 *180* Small Fab	Memo 1- ASSEMBLE INSERT IN TUBE AS PER DWG ***DO NOT INSTALL CLEVIS***	0.00 1.13				1	0	JUL 17 2017	DAS 19 9-89
190 *190* Mill Conv	Memo 1- DRILL WITNESS HOLES TRUE BOTH WALLSW AS PER DWG, SHEET 2, DETAIL A AND VIEW B-B 2- DEBURR	0.00 0.55				1	0	17-07-17	DAS 32 9-89
200 *200* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.02				1		JUL 17 2017	DAS 38 9-89

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Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Strut Assembly, LH/RH

Stop *NS2*

Start Date: 7/3/2017 **Start Qty:** 1.00

*** 1 ***

Cust Item ID:

Required Date: 7/3/2017 **Req'd Qty:** 1.00

*** 1 ***

Customer:

Reference: SCHEDULED/C

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

0.00

210

Small Fab

Memo

0.02

Small Fab

ASSEMBLE CLEVIS AND NUT AS PER DWG

220

QC5- Inspect part completeness to step on W/O

0.00

220

QC

Memo

0.02

Quality Control

Identify as per dwg & Stock Location: ST 0.00

0.00

230

Packaging

Memo

0.02

Packaging

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Item ID: D5359-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut Assembly, LH/RH
Start Date: 7/3/2017 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 7/3/2017 Req'd Qty: 1.00 *1* Customer:
Reference: SCHEDULED/C

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC21- Final Inspection - Work Order Release	0.00							
240									
QC	Memo	0.10							
Quality Control									

DAS
21
9-89

JUL 18 2017

Picklist Print

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Page 1

Work Order ID: 162939

162939

Parent Item: D5359-041

D5359-041

Parent Item Name: Strut Assembly, LH/RH

Start Date: 7/3/2017

Required Date: 7/3/2017

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev: A RQ 16.03.23 Verified by: DD
17.01.20 AS PER REV.B DD VERF:JLM

IPP REV:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2690-6 *D2690-6* Lanyard		Manufactured	No			210	Each	30.0000	2	2	DAS 30 9-89	JUL 17 2017	
									**				
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					ST009	30	159001						
					159568	30							
M304TS0.750W.049 *M304TS0 750W 049* 304 SQ Tube .75x.75x.049W		Purchased	No			110	f	536.0895	3.334	3.334	DAS 19 9-89	JUN 19 2017	
									**				
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					WA004	536.089474							
					M137401	36.089474							
					M137625	500							
D5359-3 *D5359-3* Insert		Manufactured	No			180	Each	2.0000	2	2	DAS 30 9-89	JUL 17 2017	
									**				
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					ST166	2							
					157111	2							
D5359-5 *D5359-5* Clevis, Aircraft End		Manufactured	No			210	Each	5.0000	1	1	DAS 30 9-89	JUL 17 2017	
									**				
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					GA	5							
					157112	5							

Picklist Print

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Work Order ID: 162939

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Parent Item: D5359-041

D5359-041

Parent Item Name: Strut Assembly, LH/RH

Start Date: 7/3/2017

Required Date: 7/3/2017

Start Qty: 1.00

Required Qty: 1.00

D5359-7

Manufactured No

210 Each 3.0000 1 1

DAS
30
9-89

JUL 17 2017

D5359-7

Clevis, Basket End

Location

Loc Qty

Loc Code

GA

3

157113

3

AN3CH11A

Purchased

No

180 Each 0.0000 2 2

DAS
30
9-89

JUL 17 2017

AN3CH11A

Bolt (Drilled Head)

AN3CH12A

Purchased

No

180 Each 26.0000 2 2

DAS
30
9-89

JUL 17 2017

AN3CH12A

Bolt (Drilled Head)

Location

Loc Qty

Loc Code

GA

26

m136412

16

m137361

10

MS17984-C405

Purchased

No

210 Each 1.0000 1 1

DAS
30
9-89

JUL 17 2017

MS17984-C405

Pin, Quick Release

Location

Loc Qty

Loc Code

ST315

1

m137412

1

MS17984-C608

Purchased

No

210 Each 3.0000 1 1

DAS
30
9-89

MS17984-C608

Pin, Quick Release

Location

Loc Qty

Loc Code

ST314

3

m137099

3

Picklist Print

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Page 3

Work Order ID: 162939

162939

Parent Item: D5359-041

D5359-041

Parent Item Name: Strut Assembly, LH/RH

Start Date: 7/3/2017

Required Date: 7/3/2017

Start Qty: 1.00

Required Qty: 1.00

MS21043-3

Purchased

No

180

Each

685.0000

4

4

MS21043-3

Nut

**

DAS
30
9-89

JUL 17 2017

Location

Loc Qty

Loc Code

FG

80

103691

80

FP001

119

m136182

119

GA

88

m136182

88

OVER007

300

m137587

300

ST302

98

m137459

98

NAS1149C0363R

Purchased

No

180

Each

332.0000

10

10

NAS1149C0363R

Washer

**

DAS
30
9-89

Location

Loc Qty

Loc Code

FP001

100

m133077

100

GA

16

m133077

16

ST260a

200

m137495

200

ST266

16

m136983

16

Picklist Print

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Work Order ID: 162939

162939

Parent Item: D5359-041

D5359-041

Parent Item Name: Strut Assembly, LH/RH

Start Date: 7/3/2017

Required Date: 7/3/2017

Start Qty: 1.00

Required Qty: 1.00

NAS509-6C

Purchased

No

210

Each

13.0000

2

2

DAS
30
9-89***NAS509-6C***

**

JUL 17 2017

Nut

LocationLoc QtyLoc Code

ST551

13

M128429

4

M129913

9

2

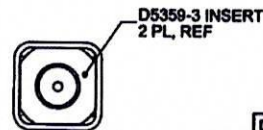
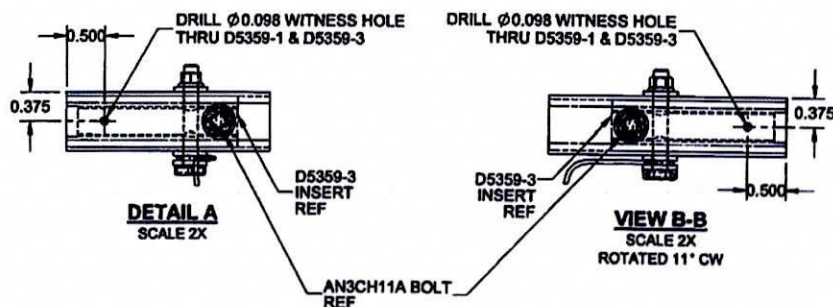
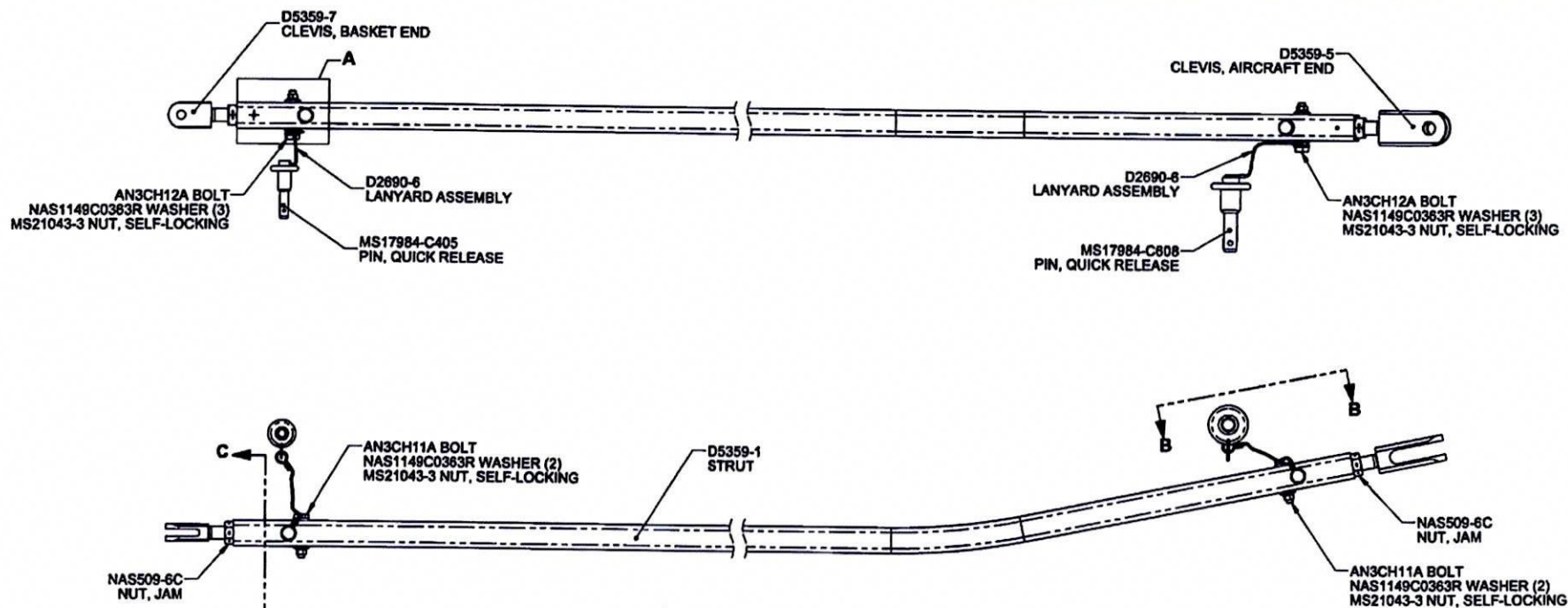
NOTES:
 (1) MAT BRVL: N/A
 (2) FINISH: NONE
 (3) TOLERANCES: PER DART OSI 0.18 UNLESS OTHERWISE NOTED
 (4) UNITS: INCHES UNLESS OTHERWISE NOTED
 (5) BREAK SHARP EDGES: N/A
 (6) IDENTIFICATION: IDENTIFY PER DART OSI 0.44 & 1
 (7) WEIGHT: 2.48 lbs
 (8) HAND TIGHTEN NAS509-6C NUT
 (9) USE TECH CLASS 1 MIL-PRF-16173E GRADE 2
 OR EQUIVALENT ANTI-SIZE COMPOUND ON THREAD



△ B D5369-041 STRUT ASSEMBLY

RELEASED
2017-02-10
FBI-DOJ

APPROVED		DATE		16.12.12	
A REDESIGNED TO BE COMPATIBLE WITH BOTH LH + RH INSTALLATIONS. -042 DELETED.	REV.	DESIGN	DRAWN	CHECKED	APPROVED
		VS	NO	AS	DD
				WAI	DS
B REDESIGNED TO BE COMPATIBLE WITH BOTH LH + RH		D5369 DRAWING NO.		STRUT ASSEMBLY TITLE	
16.12.12 VS		16.12.12 VS		16.12.12 VS	

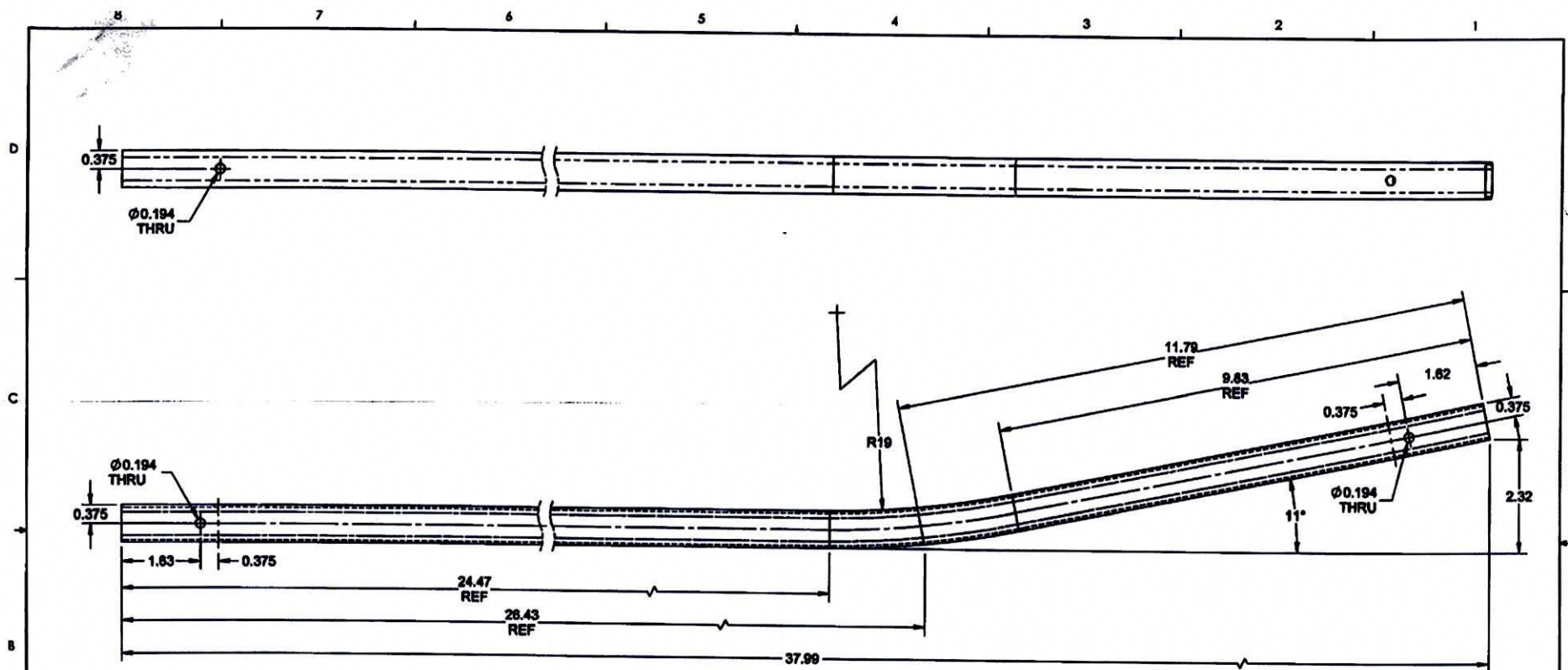


SECTION C-C

SCALE 3X
RELEASED
2017-02-10

APPROVED

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	NO	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AJS	DRAWING NO.	REV. B
MFG. APPR.	DD	D5359	SHEET 2 OF 4
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
DATE	16.12.12	COPYRIGHT © 2015 BY DART AEROSPACE LTD	
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D5359-1 STRUT

NOTES:

- 1) MATERIAL: AISI 304/316 SEAMLESS STAINLESS STEEL SQUARE TUBE, 0.75 X 0.75 X 0.049 WALL
REF DART SPEC M304TS0.750W.049
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 006 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.006 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.40 lbs
- 8) FLAT LENGTH 38.21 REF

RELEASED
2017-02-10

APPROVED

DESIGN	VS	DART AEROSPACE LTD	
DRAWN	NO	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AJS	DRAWING NO.	REV. B
MFG. APPR.	DD	D5359	SHEET 3 OF 4
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	STRUT ASSEMBLY	NTS
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